

**SOLAR INFECTION CONTROL**

**MICROBIOLOGICAL PROFILE**

# SOLAR INFECTION CONTROL MICROBIOLOGICAL PROFILE

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## INTRODUCTION

**SOLAR INFECTION CONTROL** is a concentrated, perfumed multi purpose detergent and disinfectant for use wherever there is a risk of cross infection for example in schools, hospitals, surgeries and nursing homes.

**SOLAR INFECTION CONTROL** is also available in a ready-to-use (RTU) solution. The results reported in this profile have been carried out on dilutions of the concentrated product.

**SOLAR INFECTION CONTROL** can also be used in kennels or catteries for general disinfection where there is no known virus problem. **SOLAR INFECTION CONTROL** is not effective against canine or feline viruses.

**SOLAR INFECTION CONTROL** is effective against a range of bacteria and fungi including MRSA and *Candida albicans*.

Results are presented in the following tables with effective dilution rates expressed as parts of product in parts of water.

THE RECOMMENDED USE DILUTIONS HAVE BEEN DETERMINED FROM THE TEST RESULTS AND ARE BASED ON ACTIVITY AGAINST THE MOST RESISTANT REFERENCE BACTERIA/VIRUS

**PLEASE REFER TO PRODUCT LABEL FOR HOW TO USE AND FOR ALL RECOMMENDED USE DILUTION RATES**

## 1 BACTERICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD EN1276 TEST TEMPERATURE 20°C, CONTACT TIME 1 MINUTE			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:200	1
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:25	1
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	1
<i>Salmonella enteritidis</i>	Food poisoning (linked with poultry) resulting in gastroenteritis	1:40	1
<i>Shigella sonnei</i>	Dysentery	1:40	1
Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA)	Skin, bone and wound infections, pneumonia. Resistant to treatment with the antibiotic Methicillin	1:200	1
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:100	1

## 1 BACTERICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD EN1276 TEST TEMPERATURE 20°C, CONTACT TIME 1 MINUTE			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:100	1
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:10	1
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:10	1
<i>Salmonella enteritidis</i>	Food poisoning (linked with poultry) resulting in gastroenteritis	1:20	1
<i>Shigella sonnei</i>	Dysentery	1:20	1
Methicillin Resistant <i>Staphylococcus aureus</i> (MRSA)	Skin, bone and wound infections, pneumonia. Resistant to treatment with the antibiotic Methicillin	1:100	1
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:100	1

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## 1 BACTERICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD EN13697 TEST TEMPERATURE 20°C, CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:100	2
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:40	2
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:5	2
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:50	2

## 1 BACTERICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD EN13697 TEST TEMPERATURE 20°C, CONTACT TIME 5 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:50	2
<i>Escherichia coli</i>	Food poisoning, urinary tract infections	1:80	2
<i>Pseudomonas aeruginosa</i>	Opportunistic pathogen, wound, burn infections	1:5	2
<i>Staphylococcus aureus</i>	Skin, bone and wound infections	1:25	2

## 1 BACTERICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD EN1656 TEST TEMPERATURE 10°C, CONTACT TIME 30 MINUTES			
BACTERIA	DISEASE	BACTERICIDAL DILUTION	TEST REFERENCE
<i>Enterococcus hirae</i>	Urinary tract infections	1:100	3
<i>Proteus vulgaris</i>	Urinary tract infections	1:80	3
<i>Pseudomonas aeruginosa</i>	Ear infections	1:10	3
<i>Staphylococcus aureus</i>	Skin infections	1:100	3

## 1 BACTERICIDAL ACTIVITY

BACTERIA	DISEASE	EFFECTIVE DILUTION	TEST REFERENCE
<i>Legionella pneumophila</i>	Legionnaires disease	1:250	4

**SOLAR INFECTION CONTROL** is suitable for disinfecting shower heads only and should not be used in water systems for the control of Legionella

## 2 FUNGICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD EN1650 TEST TEMPERATURE 20°C, CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	1:5	5
<i>Candida albicans</i>	Thrush	1:100	5

## 2 FUNGICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD EN1650 TEST TEMPERATURE 20°C, CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	UNDILUTED	5
<i>Candida albicans</i>	Thrush	1:10	5



## 2 FUNGICIDAL ACTIVITY UNDER CLEAN CONDITIONS

TEST METHOD EN13697 TEST TEMPERATURE 20°C, CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	1:5	2
<i>Candida albicans</i>	Thrush	1:50	2

## 2 FUNGICIDAL ACTIVITY UNDER DIRTY CONDITIONS

TEST METHOD EN13697 TEST TEMPERATURE 20°C, CONTACT TIME 15 MINUTES			
FUNGI	DISEASE	FUNGICIDAL DILUTION	TEST REFERENCE
<i>Aspergillus niger</i>	Aspergillosis	1:5	2
<i>Candida albicans</i>	Thrush	1:25	2

## APPENDIX I

### TEST METHOD REFERENCES

Laboratory tests for bactericidal and fungicidal activity, have been performed by the UKAS accredited Microbiology Laboratory (Testing Number 1108) of Evans Vanodine International Plc. Tests against Legionella were performed by an independent testing laboratory.

#### **1**     EN 1276:1997

**Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic, and institutional areas**

Designed to test bactericidal products specifically for use in the Food and Catering Industry. It is carried out under “dirty” (representative of surfaces which are known to or may contain, organic and/or inorganic materials) and “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

Obligatory Test Parameters:     5 minute contact time, 20°C, hard water, organic soiling.  
Bactericidal Criteria:             5 log reduction.

#### **2**     EN 13697:2001

**Chemical disinfectants and antiseptics – Quantitative non-porous surface test for the evaluation of bactericidal and/or fungicidal activity of chemical disinfectants used in food, industrial, domestic and institutional areas. Without mechanical action.**

Designed to test bactericidal and fungicidal products on stainless steel surfaces inoculated with bacteria and an organic interfering substance. It is carried out under “dirty” (representative of surfaces which are known to or may contain organic and/or inorganic materials) and “clean” (representative of surfaces which have received a satisfactory cleaning programme and/or are known to contain minimal levels of organic and/or inorganic materials) conditions.

Obligatory Test Parameters:     5 minute contact time, for 20°C, hard water, organic soiling.  
Bactericidal Criteria:             5 log reduction.

Obligatory Test Parameters:     15 minute contact time, for 20°C, hard water, organic soiling.  
Fungicidal Criteria:               4 log reduction.

## APPENDIX I

### TEST METHOD REFERENCES

#### 3. EN 1656:2000

**Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of bactericidal activity of chemical disinfectants and antiseptics used in the veterinary field.**

This European Standard is applicable to products for use in the veterinary field, i.e. in the breeding, husbandry, production, transport and disposal of all animals except when in the food chain following death and entry to the processing industry.

Obligatory Test parameters: 30 minute contact time, 10 °C, hard water, organic soiling.  
Bactericidal criteria: 5 log reduction

#### 4 ACTIVITY AGAINST LEGIONELLA

Test performed at an independent testing laboratory.  
Bacterial assay against *Legionella pneumophila* (NCTC 11192)

Test Parameters: 5 minute contact time, 20°C.

#### 5 EN 1650:1998

**Chemical disinfectants and antiseptics - Quantitative suspension test for the evaluation of fungicidal activity of chemical disinfectants and antiseptics used in food, industrial, domestic and institutional areas.**

Designed to test fungicidal products specifically for use in the Food and Catering Industry. It is carried out under the same conditions as the BSEN 1276.

Obligatory Test Parameters: 15 minute contact time, 20°C, hard water, organic soiling.  
Bactericidal Criteria: 4 log reduction.

## APPENDIX II

### GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

<b>Agar</b>	A derivative of marine sea-weed, used as a solidifying agent in <i>media</i> .
<b>Acid</b>	A substance with a pH less than 7.
<b>Aerobic</b>	Grows in oxygen atmosphere.
<b>Alkali</b>	Substance with a pH greater than 7.
<b>Algicide</b>	A chemical agent which, under defined conditions, is capable of killing algae including their <i>spores</i> .
<b>Amphoteric</b>	A class of surfactant, having both <i>anionic</i> and <i>cationic</i> properties.
<b>Anaerobic</b>	Grows in oxygen free atmosphere.
<b>Anionic</b>	A surfactant in which the surface active agent has a negative charge.
<b>Antimicrobial</b>	A substance capable of killing <i>micro-organisms</i> .
<b>Antisepsis</b>	The destruction or inhibition of <i>micro-organisms</i> on living tissues having the effect of limiting or preventing the harmful results of infection. It is not a synonym for <i>disinfection</i> .
<b>Antiseptic</b>	A chemical agent used in <i>antisepsis</i> .
<b>Bacillus</b>	A rod shaped bacteria.
<b>Bactericide</b>	A chemical agent which, under defined conditions, is capable of killing bacteria but not necessarily bacterial <i>spores</i> .
<b>Bacteriostasis</b>	A state of bacterial population in which, multiplication is inhibited.
<b>Bacteriostat</b>	A chemical agent which under defined conditions induces <i>bacteriostasis</i>
<b>Biocide</b>	A generalised term for a chemical agent capable of killing or inactivating <i>micro-organisms</i> . It embraces the more specific terms <i>algicide</i> , <i>bactericide</i> , <i>fungicide</i> , <i>sporicide</i> and <i>virucide</i> (see also <i>germicide</i> ). Note. Pesticides are not considered to be <i>biocides</i> .
<b>Black fluids</b>	Coal-tar fractions solubilised with soaps.
<b>Cationic</b>	A surfactant in which the surface active agent has a positive charge
<b>Chemical Sterilizing Agent</b>	A chemical agent which, under defined conditions, leads to <i>sterilization</i> .
<b>Chlorhexidine</b>	A bisphenol compound used as <i>antiseptic</i> and <i>disinfectant</i> .

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<b>Chlorine</b>	A member of the Halogen group of elements. Frequently, but usually, incorrectly used to define the active species in, e.g. solutions of sodium hypochlorite.
<b>Coccus</b>	A spherical bacterium.
<b>Disease</b>	Any change from a general state of good health.
<b>Disinfectant</b>	A chemical agent which under defined conditions is capable of <i>disinfection</i> .
<b>Disinfection</b>	The destruction of <i>micro-organisms</i> , but not usually bacterial <i>spores</i> : it does not necessarily kill all <i>micro-organisms</i> , but reduces them to a level acceptable for a defined purpose, for example, a level which is harmful neither to health nor to the quality of perishable goods.
<b>DNA</b>	Deoxyribonucleic acid.
<b>Formaldehyde</b>	A colourless gas with a characteristic pungent odour. Used as a disinfectant in <i>fumigation</i> .
<b>Fumigation</b>	Exposure of enclosed spaces to action of gaseous or vapour-phase disinfectants or sterilants.
<b>Fungicide</b>	A chemical agent which under defined conditions is capable of killing fungi including their <i>spores</i> .
<b>Fungus</b>	A group of diverse unicellular and multicellular microorganisms (pl. fungi)
<b>Fungistasis</b>	A state of fungal population the development of which is inhibited.
<b>Fungistat</b>	A chemical agent which under defined conditions induces <i>Fungistasis</i> .
<b>Genus</b>	See <i>Species</i> .
<b>Germ</b>	A vague term which should be avoided. A <i>micro-organism</i> which can be harmful.
<b>Germicide</b>	A vague term which should be avoided. An agent under defined conditions, which is capable of killing <i>germs</i> .
<b>Glutaraldehyde</b>	A broad spectrum biocide used as an active ingredient in formulated disinfectants.
<b>Gram Stain</b>	Stain technique used to classify bacteria into two groups: Gram negative or Gram positive.
<b>Halogens</b>	A group of chemicals consisting of e.g. Fluorine, <i>Chlorine</i> , <i>Iodine</i> and Bromine.

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<b>Hydrogen Peroxide</b>	A bleaching/oxidising agent used as a disinfectant.
<b>Hypochlorite</b>	Usually sodium hypochlorite, solutions of hypochlorite are oxidising disinfectants producing the biocidally active hypochlorite anion and hypochlorous acid.
<b>Iodine</b>	A <i>Halogen</i> similar to <i>chlorine</i> but more stable and less reactive.
<b>Iodophor</b>	<i>Iodine</i> in solution of surfactant with stabiliser.
<b>Media</b>	A nutrient rich solid or liquid (agar or broth) used to grow <i>micro-organisms</i> .
<b>Microbe</b>	An alternative expression for <i>micro-organism</i> .
<b>Micro-organism</b>	A microscopic entity capable of replication. It includes bacteria, viruses and the microscopic forms of algae, fungi and <i>protozoa</i> .
<b>Motile</b>	Describes organisms which can move independently.
<b>Mould</b>	Any fungus that forms visible <i>mycelia</i> growth.
<b>Mycelium</b>	A visible mass of tangled filaments of fungal growth.
<b>Nucleic Acids</b>	An organic compound composed of nucleotides <i>DNA</i> and <i>RNA</i>
<b>Oocyst</b>	An oval body in the reproduction cycle of certain <i>protozoa</i> .
<b>Pathogen</b>	An organism that causes <i>disease</i> animals, plants or <i>micro-organisms</i> .
<b>Peracetic acid</b>	Acid produced by combination of acetic acid and <i>hydrogen peroxide</i> .
<b>Phenol</b>	Chemical derived from coal tar. Used as a <i>disinfectant</i> .
<b>Preservation</b>	Maintaining numbers of <i>micro-organisms</i> at low levels i.e. low enough to make food safe to eat or to prevent spoilage.
<b>Protozoa</b>	Unicellular <i>micro-organisms</i> . Classified in the Animal Kingdom.
<b>Quaternary Ammonium Compound</b>	A <i>cationic surfactant</i> with strong bactericidal but weak detergent properties.
<b>RNA</b>	Ribonucleic acid involved in protein synthesis.
<b>Sanitization</b>	A term used mainly in the food and catering industry. A process of both cleaning/disinfecting utensils, equipment and surfaces.
<b>Sanitizer</b>	A chemical agent used for <i>sanitization</i> .
<b>Somatic</b>	Refers to the “body” or main part of a cell. Does not include reproductive structures such as <i>spores</i> .

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### GLOSSARY OF MICROBIOLOGICAL AND CHEMICAL TERMS

<b>Species</b>	Fundamental rank of the classification system. (Two or more species grouped together are classed as a <i>genus</i> ).
<b>Spirochete</b>	A twisted bacterial rod with a flexible cell wall containing axial filaments for <i>motility</i> .
<b>Spore</b>	A highly resistant structure formed from <i>somatic</i> cells in several genera of bacteria. e.g. <i>Bacillus</i> . Also a reproductive structure formed by fungi.
<b>Sporicide</b>	A chemical agent which, under defined conditions, is capable of killing bacterial <i>spores</i> .
<b>Sterile</b>	Free from all living <i>micro-organisms</i> .
<b>Sterilization</b>	A process which renders an item <i>sterile</i> .
<b>Sterilizing agent</b>	An agent or combination of agents which under defined conditions leads to <i>sterilization</i> .
<b>Surfactant</b>	A surface active agent.
<b>Toxin</b>	A poisonous substance produced by a <i>species</i> of <i>micro-organism</i> .
<b>Vibrio</b>	A form of <i>bacteria</i> occurring as a curved rod.
<b>Virucide</b>	A chemical agent which, under defined conditions, is capable of killing or inactivating <i>viruses</i>
<b>Virus</b>	A non-cellular entity consisting of protein and <i>nucleic acid</i> . Can only replicate after entry into specific types of living cell.
<b>White fluids</b>	Prepared by emulsifying tar fractions.
<b>Zoonosis</b>	Any <i>disease</i> which can be transmitted from animal to man and vice-versa